



Regulatory and Institutional Issues

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Electric Distribution Transformation Program

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- **Relevance to problems/needs**
- **Technical approach to addressing the identified problems/needs**
- **Technical accomplishments and progress toward project objectives**
- **Impacts and benefits, on electricity affordability/reliability and infrastructure security/resilience, from implementation of project advancement**
- **Leverage of funds/collaborations with industry/universities/government laboratories/states/end-users:**



Objectives - 1

The regulatory and institutional issues project has the following objectives:

- To ensure the understanding, regulatory adoption, and maximum impact of the interconnection and communication standards work of the program by relevant regulatory and policy institutions
- To identify, analyze, and develop solutions to reduce institutional, policy and infrastructure barriers to the development and commercialization distributed power systems, and the development and deployment of next generation communications and controls and other technical innovations developed by the Office of Transmission and Distribution



Objectives - 2

- To provide *technical assistance to state and local regulators and policy makers* including training, education, workshops, reports and other means to support the most informed analysis and decision making by state and local regulators and policy makers.
- To provide relevant input to the Program and Office planning process regarding *the current and future needs of the regulatory and policy stakeholder communities* in order to incorporate such needs and considerations into overall Program Objectives



Assumptions:

- Regulation and Regulators are in trouble today
 - Philosophical and Ideological Support has eroded
 - Financial and Political Support has eroded
 - Legacy Axioms of Traditional Regulation Not Robust
 - Regulation “lite” was the order of the day until 1970’s
 - “Cost-of-Service” Rate-Based, Rate of Return Regulation Works much better when regulating a single monopoly provider of a single service—dial tone, kwhours, long distance.
 - State budgetary crisis
 - Loss of institutional knowledge since the 70’s and 80’s
- Faced with vastly more complicated environment
- The “legacy” wisdom developed in a different time no longer can be relied upon to yield decisions in the public interest.



Examples:

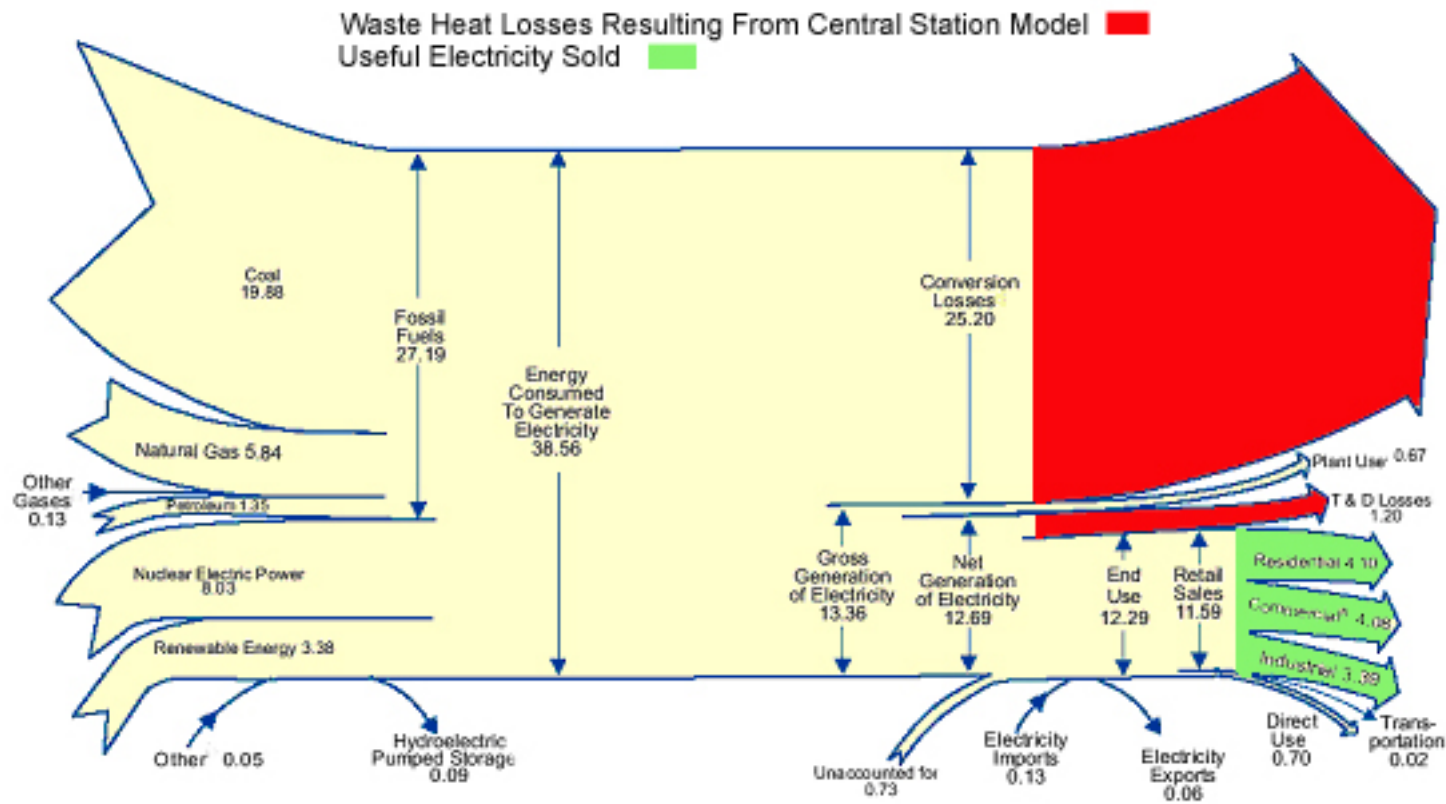
- Wholesale/Retail (Federal/State) Jurisdiction
 - Consider actually making a “mini-grid” a reality
 - How does the state incorporate the challenge into its body of law, rules and regulations
- CHP – the classic “lose-lose” result of unexamined regulatory principles
 - Static analysis and assumptions rather than dynamic
 - “Preserve the revenue flow”
 - It is the fundamental equation that matters:
 - $\text{Revenue Requirement} = \text{Return of Rate Base Investment} + \text{Return On RateBase Investment} + \text{Expenses}$
- The “legacy” wisdom developed in a different time no longer can be relied upon to yield decisions in the public interest.



ELECTRIC DISTRIBUTION TRANSFORMATION PROGRAM



Diagram 5. Electricity Flow, 2001
(Quadrillion Btu)





Problems/Needs

- Counter Intuitive Need for Greater Regulatory Strength and Support in order to Reduce negative impacts of regulation.
- Need for a significant review and revision of the current regulatory regime at the state level,
- Need for the support of the development of regulatory issues and solutions at the regional level, and
- Need for the development of sound policy related analysis supporting the integration of the state and regional regimes with the national level requirements led by the Federal Energy Regulatory Commission.

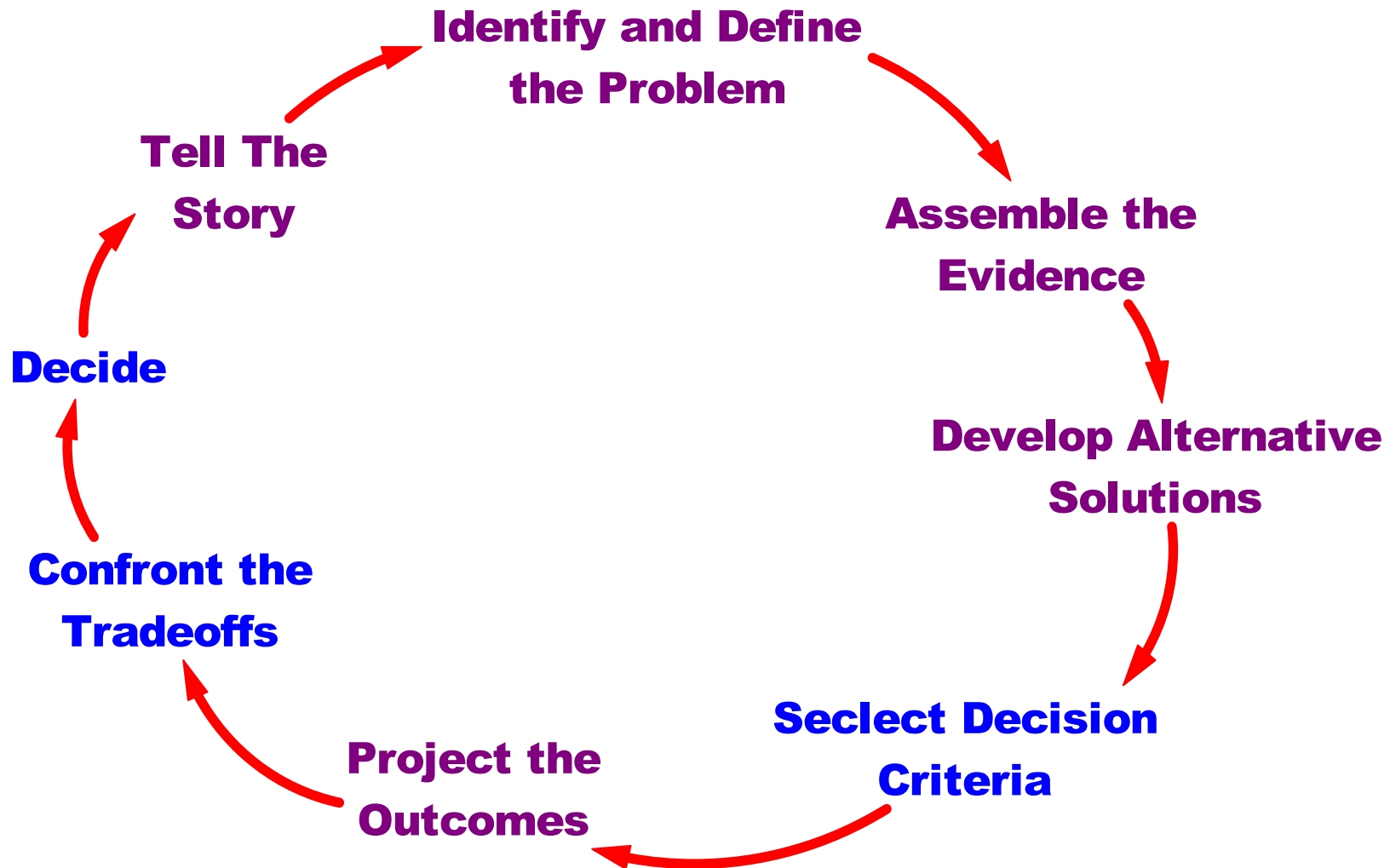


Technical Challenges

- **The regulatory and institutional issues activity utilizes a staged model of identification, collaborative analysis, and solutions development in achieving its Project Objectives.**
- **Issues are identified through ongoing collaborations with industry and regulators, addressed through**
 - **in-house and subcontract research and consensus building in reducing barriers and developing solutions (studies, etc.) with state and local entities;**
 - **providing technical assistance to states considering legislation or regulation affecting distributed power; and**
 - **conducting workshops on understanding, identifying and removing barriers to deployment of distributed power systems.**



The Regulatory Change Model



Adopted From Bardach, A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving



Technical Challenges - 2

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- **conducting workshops on understanding, identifying and removing barriers to deployment of distributed power systems.**
- **Presentations, collaborations, articles, other publications**



Technical Scope

In-House support of the Stakeholder & Institutional Adoption Program includes:

- **Ongoing participation in state, regional, and national conferences relating to the regulatory environment of distributed power systems, and the modernization of the electric industry infrastructure.**
 - This participation provides important information regarding issue identification and solution development, along with developing personal relationships and assessments of potential key players in collaborative solution development processes.
 - Investigation and development of future distributed energy resources issues in utility regulation and areas of potential support for NARUC institutional responses, including new committee structure, annual conferences, training programs, etc.
- **Continued Development of State Utility Commission Staff and Commissioner Understanding and Proactive Resolution of Challenges Provided by Traditional Regulation to the Commercialization of Distributed Power. This activity has included funding provided to NARUC to develop Model Interconnection Agreement and Procedures, and small subcontracts to utility engineers to develop approaches later utilized in the FERC Small Generation Interconnection Standard process.**
- **This activity builds on the FY 2002 achievements including the adoption of the NARUC Resolution Endorsing the Development of Model Interconnection Agreement and Procedures at its February 2002 Winter Meeting, the subsequent development and adoption by NARUC of recommended model interconnection agreement and procedures, and the ongoing use of the knowledge and approach developed both at the state level and in the FERC Small Generator proceedings.**



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Subcontract activities in this project:

Regulatory Assistance Program (RAP) –

- RAP will continue its work through working with specific state commissions on an as requested basis in supporting the understanding, adaptation, and adoption of both the draft model for output-based emissions performance standards for distributed and the NARUC Model Interconnection Agreement Procedures, and such other areas as individual state utility or environmental regulators may require.

The Center for the Advancement of Energy Markets (CAEM)

- Analysis and Development of Model Options of Electric Utility Rates and Tariffs Affecting DER. This subcontract provides for the following objectives:
 - **1) Analyze existing distribution service rates and tariffs,**
 - **2) Develop model DER rate and tariff options, and**
 - **3) Presentation of the results to regulatory commissioners and commission staff.**



- **Development of additional training and education workshops and materials** for state commissions and commission staffs to support state understanding and action toward modernizing of the electricity infrastructure, with specific attention to distributed energy resource and next generation communications and control issues.
 - **Modular 3-5 Day Course**
 - **Distribution System Regulatory Issues Primer**
 - **Modular 1 hour to 1 Day IEEE 1547 Course**
 - (To be developed In-House)
 - **Modular 1 hour to 1 Day FERC Standardization of Small Generator Interconnection Agreements and Procedures Course**
 - (To Be Developed In-House)



Investigation of DG Tariff Related Issues

- Developing reasonable, fair and equitable tariff approaches for the integration of distributed energy resources remains a major challenge to traditional regulatory approaches.
- This project intends to utilize proposals to address activities to examine alternatives to the current, largely discriminatory rates and tariffs for DER. These alternatives are sought in order to provide policy makers, regulators and other stakeholders with sound alternatives that could speed the commercial adoption of DER for the wide range of current and potential applications.
- Issues to be addressed include the examination of the bases for solution of specific DER issues related to rates and tariff structures such as developing approaches for reasonable and equitable standby or back up tariffs, the effect of scheduled and unscheduled maintenance on potential demand charges, compensation for benefits to the distribution system provided by DER, and/or treatment of the so-called “stranded asset” problem.



Outyear Activities

- Outyear Activities for the Regulatory and Institutional Issues Project
 - completion of the above described contract activities,
 - development of additional projects regarding newly identified regulatory barriers affecting the program objectives, and
 - ongoing delivery of the information and materials developed to regulators and related stakeholders and policy makers.
- Impacts/Benefits
 - Recent visioning and roadmap development work, along with the series of workshops held in development of the Communications and Controls program all underlined the necessity of informing and working with state, regional, and federal regulators as critical to the successful achievement of program and office goals and objectives.
 - Virtually every session no matter what the topic identified regulatory policy, certainty, or alignment with national goals as critical to the achievement of the objectives of the roadmap and the achievement of the vision.
 - This project is a critical path asset to the Electric Distribution Transformation Program in supporting the Office objectives.



Relevance to Problems and Needs

- Every Stakeholder inquiry and planning process has highlighted aspects of regulatory and institutional practice as critical to achieving objectives of the program and the Office.
 - *DOE's National Electric Vision Document* (Final version, July 31, 2003)
 - Roadmap Workshop Proceedings
 - Vision Meeting Proceedings
 - First Distributed Generation meeting held in 1998 identified the need for the existence and adoption of national standards.



Findings

Unprecedented levels of risk and uncertainty about future conditions in the electric industry have raised concerns about the ability of the system to meet future needs. Thousands of megawatts of planned electric capacity additions have been cancelled. Capital investment in new electric transmission and distribution facilities is at an all-time low.

The regulatory framework governing electric power markets – both at the Federal and state levels – is also under stress. Efforts to loosen regulations and unleash competition have generally fallen short of producing their expected results.

Conclusions

A breakthrough is needed to eliminate the “political log jam” and reduce the risks and uncertainties caused by today’s regulatory framework. This includes clarifying intergovernmental jurisdiction, establishing “rules of the road” for workable competitive markets wherever they can be established, ensuring mechanisms for universal service and public purpose programs, and supporting a stable business climate that encourages long-term investment. development, and deployment effort is paramount.”

From *DOE’s National Electric Vision Document* Findings and Conclusions
(Final version, July 31, 2003)



Leverage, Interactions & Collaborations

- National Association of Regulatory Utility Commissioners
- National Association of State Utility Consumer Advocates
- Power Systems Engineering Research Center (PSERC)
- National Council of State Legislatures
- California Energy Commission





- In-House FY04 Milestones

Title	Description	Due Date
In-House Regulatory Work	First Delivery of IEEE 1547 Module	12/31/2003
In-House Regulatory Work	First Delivery of FERC Small Generator Module	3/31/2004
In-House Regulatory Work	Support to other Program activities	As requested, GRIDWISE at NARUC Summer November 2003 and Winter Meetings
RAP	Draft Primer on Distribution System	6/30/2004
CAEM	Draft Report on DG Tariff & Rate Issues	9/30/2004

- Budgets--Overall Stakeholder and Institutional Issues

Cost Element	FY04 (\$K)	FY05 (\$K)	FY06 (\$K)	FY07 (\$K)	FY08 (\$K)
Labor	283	368	441	486	534
Travel	31	34	38	41	45
Subcontracts	146	219	241	265	291
Other Costs	70	77	85	93	102
TOTAL	530	698	805	885	974



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